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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MICHAEL L. LEETZOW,P.A.
5213 SHORELINE CIRCLE
STANFORD, FL 32771

EXAMINER	
WOOD, KEVIN S	

ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/099,665	CARNEVALE ET AL.	
	Examiner	Art Unit	
	Kevin S Wood	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18 and 21* is/are rejected.

7)☒ Claim(s) *19 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 March 2002* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Brian Healy
Primary Examiner

DETAILED ACTION

Response to Amendment

1. This action is responsive to the Amendment filed 8 December 2003. No claims have been amended, no new claims have been added and no claims have been canceled. Claims 1-21 are pending in the application.

Response to Arguments

2. Applicant's arguments filed on 8 December 2003 with respect to claims 1-10, 16-18 and 21 have been fully considered but they are not persuasive. The examiner has thoroughly reviewed the applicant's arguments but firmly believes the cited references to reasonably and properly meet the claimed limitations.

Referring to claims 1-5, the applicant's primary argument was that Murakimi et al. does not disclose the optical fibers leaving the plane of the flexible substrate. The applicant also argues that the legs of the optical fibers do not overlie one another in a stacked configuration. The examiner respectfully disagrees with the applicant's arguments and the applicant's interpretation of what the reference shows. The reference clearly shows in Fig. 12 through Fig. 14, that the optical fiber legs leave the plane of the flexible substrate. See Fig. 13, where leg (31) is clearly leaving the plane of substrate (32). As for the legs overlying one another in a stacked configuration, the reference shows the legs being coupled to rows of inlets (44). The optical connecting article (30) is used to couple inlets that are stacked or side-by-side in rows. When the

inlets needing to be connected are stacked, then the optical fiber legs (31) would also be arranged in a stacked configuration where the optical fiber legs overlie one another.

Referring to claim 2, the applicant argues that Murakimi et al. does not disclose a second group of optical fibers overlying a first group of optical fibers, while the first group of optical fibers is supported by the flexible substrate. The examiner respectfully disagrees with the applicant's arguments and the applicant's interpretation of what the reference shows. In Fig. 13, is clear that one of the optical fiber legs (31) may overlie a group that is still held within the flexible substrate (32).

Referring to claims 6-10, the applicant argues that Murakimi et al. does not disclose the legs of the optical fibers overlying one another in a stacked configuration. The examiner respectfully disagrees with the applicant's arguments and the applicant's interpretation of what the reference shows. The applicant seems to be implying that the device disclosed by Murakimi et al. cannot be used to connect inlets (44) that are stacked, and therefore, the optical fiber legs (31) of the optical connecting article (30) cannot be stacked. The reference clearly shows the legs being coupled to rows of inlets (44). The optical connecting article (30) is used to couple inlets that are stacked or side-by-side in rows. When the inlets needing to be connected are stacked, then the optical fiber legs (31) would also be arranged in a stacked configuration where the optical fiber legs overlie one another.

Referring to claim 7, the applicant argues that Murakimi et al. does not disclose a single connector mounted to a plurality of the optical fiber legs. The applicant argues that the reference discloses a connector for each optical fiber leg. The examiner agrees

that Murakimi et al. discloses an optical fiber connector (6) connected to each optical fiber leg (31). However, Murakimi et al. also discloses that a plurality of those optical fiber legs (31) with connectors (6) may be connected to a single connector (A,B), where that connector is an optical component such as a photodiode or laserdiode. See Fig. 1 or Fig. 19. Therefore, the examiner respectfully disagrees with the applicant's argument and believes the cited reference to clearly meet the limitations of the claimed invention of claim 7.

Referring to claims 16-18 and 21, the applicant argues that Murakimi et al. does not disclose the positioning of a first group of optical fibers so as to overlie a second group of optical fibers; and coating the first group of optical fibers with a matrix material. Specifically the applicant argues that Murakimi et al. discloses all the fibers being in the same plane, not in different planes. The examiner respectfully disagrees with the applicant's argument. Murakimi et al. clearly discloses some of the fibers overlapping some of the other fibers. This overlapping would have inherently been done before applying the matrix material. See all the figures of the reference.

3. Applicant's arguments, filed 8 December 2003, with respect to the rejection(s)of claim(s) 11-15 under 35 U.S.C 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent No. 6,240,232 to Schneider et al.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-10, 16-18 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0015563 to Murakimi et al.

Referring to claim 1, Murakimi et al. discloses all the limitations of the claimed invention. Murakimi et al. discloses an optical connecting article, including: a main body comprising: a flexible substrate (42); and a plurality of optical fibers mounted so as to lie in a common plane upon the substrate, the optical fibers (2) arranged in a plurality of groups proximate an edge of the substrate with each group including at least one optical fiber, the optical fibers of a first group extending toward the optical fibers of a second group; and a plurality of legs (43) extending outwardly from the edge of the main body, each leg comprising the optical fibers of a respective group and a matrix material for binding the optical fibers of the respective group together, the legs disposed in a stacked configuration in which at least one leg overlies another leg such that at least one leg lies at least partially outside of the common plane. See Fig. 12 through Fig. 15, along with their respective portions of the specification.

Referring to claim 2, Murakimi et al. discloses all the limitations of the claimed invention. Murakimi et al. discloses the plurality of groups of optical fibers extend in a parallel, spaced apart arrangement across a portion of the flexible substrate (32), and where in the second group of optical fibers over lies the first group of optical fibers while the first group of optical fibers is supported by the flexible substrate. See Fig. 12 and its respective portion of the specification.

Referring to claims 3 and 4, Murakimi et al. discloses all the limitations of the claimed invention. Murakimi et al. discloses that connectors (6,33) are mounted upon respective groups of the optical fibers (43) proximate an edge of the main body.

Referring to claim 5, Murakimi et al. discloses all the limitations of the claimed invention. Murakimi et al. discloses the matrix material of at least one leg comprises a coating such that the respective leg (43) is independent of the flexible substrate.

Referring to claim 6, Murakimi et al. discloses all the limitations of the claimed invention. Murakimi et al. discloses an optical connecting article, including: a main body comprising: a flexible substrate (42); and a plurality of optical fibers mounted upon the substrate, the optical fibers (2) arranged in a plurality of groups proximate an edge of the substrate with each group including at least one optical fiber; and a plurality of legs (43) extending outwardly from the edge of the main body in a stacked configuration in which at least one leg overlies another leg, each leg comprising the optical fibers of a respective group and a matrix material for binding the optical fibers of the respective group together, the matrix material of at least one leg comprising a coating such that the

respective leg is independent of the flexible substrate. See Fig. 12 through Fig. 15, along with their respective portions of the specification.

Referring to claim 7, Murakimi et al. discloses all the limitations of the claimed invention. Murakimi et al. discloses that connectors (6,33) are mounted upon respective groups of the optical fibers (43) proximate an edge of the main body.

Referring to claim 8, Murakimi et al. discloses all the limitations of the claimed invention. Murakimi et al. discloses that each optical fiber extends from a respective first end upon which the first fiber optic connector (6,33) is mounted, across the flexible substrate (32,42) to an opposed second end, and wherein the optical circuit further comprises a plurality of second fiber optic connectors (6,33) mounted upon the second ends of the optical fibers (2) of respective groups.

Referring to claim 9, Murakimi et al. discloses all the limitations of the claimed invention. Murakimi et al. discloses the plurality of groups of optical fibers extend in a parallel, spaced apart arrangement across a portion of the flexible substrate (32), and wherein the optical fibers (2) of one group extend toward the optical fibers (2) of another group while each group of optical fibers is supported by the flexible substrate. See Fig. 12 and its respective portion of the specification.

Referring to claim 10, Murakimi et al. discloses all the limitations of the claimed invention. Murakimi et al. discloses the groups of optical fibers (2) that extend towards the other group of optical fibers separates from the flexible substrate (32) and transitions so as to overlie the other group of optical fibers while the other group of

optical fibers is supported by the flexible substrate. See Fig. 12 and its respective portion of the specification.

Referring to claim 16, Murakimi et al. discloses all the limitations of the claimed method. Murakimi et al. discloses a method of fabrication an optical circuit including: providing a main body comprising a flexible substrate (32,42) and a plurality of groups of optical fibers (2) proximate an edge of and adhered to the flexible substrate, each group including at least one optical fiber; positioning a first group of optical fibers (2) so as to overlie a second group of optical fibers; and coating the first group of optical fibers with a matrix material once the first group of optical fibers is positioned to overlie the second group of optical fibers. See Fig. 12 through Fig. 18, along with their respective portions of the specification.

Referring to claims 17, 18 and 21, Murakimi et al. discloses all the limitations of the claimed method. Murakimi et al. discloses securing the first and second groups of optical fibers relative to one another after positioning the first group of optical fibers to overlie the second group of optical fibers, and releasing the first and second groups of optical fibers after coating at leas the first group of optical fibers with the matrix material. See Fig. 12 through Fig. 18, along with their respective portions of the specification.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,240,232 to Schneider et al.

Referring to claim 11, Schneider et al. discloses an optical circuit, including: a main body comprising: a substrate (1); and a plurality of optical waveguides (3-7) mounted upon the substrate and arranged in a plurality of groups proximate an edge of the substrate with each group including at least one optical waveguide; and a plurality of legs including first (3), second (4) and third (5) legs extending outwardly from the edge of the main body, each leg comprising the optical waveguide of a respective group and a matrix material for binding the optical fibers of the respective group together, the legs disposed in a stacked configuration in with the first and second legs transitioning so as to overlie the third leg at different locations. See 1-4, along with their respective portions of the specification. Schneider et al. dose not appear to disclose that the

optical waveguides are optical fibers and Schneider et al. also does not appear to disclose that the substrate is flexible. Murakami et al. discloses a similar device that utilizes a flexible substrate and optical fibers for the purpose of improving the handlability of the device and for making the device durable. Since Schneider et al. and Murakami et al. are both from the same field of endeavor, the purpose of Murakami et al. would have been recognized in the pertinent art of Schneider et al. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use optical fibers and a flexible substrate in the device of Schneider et al., since it would improve the durability and handlability of the device.

Referring to claim 12, Schneider et al. in view of Murakami et al. discloses all the limitations of the claimed invention. Murakami et al. discloses the matrix material of at least the first and second legs comprises a coating such that the respective leg is independent of the substrate.

Referring to claim 13, Schneider et al. in view of Murakami et al. discloses all the limitations of the claimed invention. Schneider et al. discloses the plurality of groups of optical waveguides extend in a parallel, spaced apart arrangement across a portion of the substrate, and wherein the optical waveguide of one group extend toward the optical waveguide of another group while each group of optical fibers is supported by the substrate.

Referring to claim 14 and 15, Schneider et al. discloses all the limitations of the claimed invention. Schneider et al. discloses that each optical fiber extends from a respective first end upon which the first fiber optic connector is mounted, across the

substrate to an opposed second end, and wherein the optical circuit further comprises a plurality of second fiber optic connectors mounted upon the second ends of the optical waveguide of respective groups.

Allowable Subject Matter

9. Claims 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claim 19, the prior art does not disclose all the limitations of the claimed method. The prior art does not disclose the attaching of the first and second groups of optical fibers to opposite sides of an adhesive coated spacer while coating at least the first group of optical fibers with a matrix material, and the removing the spacer after coating at least the first group of optical fibers with the matrix material.

Referring to claim 20, the prior art does not disclose all the limitations of the claimed method. The prior art does not disclose the coating of the first group of optical fibers includes the spraying a coating of the matrix material onto the first group of optical fibers.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (571) 272-2364. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KSW

Brian Healy
Primary Examiner